



Assignment 3

Overview

The objective of this assignment is for you to gain more understanding of the virtual address space of a process. You must complete this assignment before its **deadline**, which is **Sunday, October 25, at 9:00 P.M. EST**.

Instructions

1. Login to `eniac` using your Computer Science Department Network username and password. If you cannot do this, then this is the first problem you have to solve. Everyone in the class has an account on the network and therefore has a username and password. Contact our system administrator by sending email to `cstechsp@hunter.cuny.edu` if you cannot login. *Do not send email to any other address!*
2. If you login successfully, then **`ssh` to any `cslab` host**. **You cannot complete this assignment on `eniac`!**
3. The instructions below arbitrarily assume that you have logged into `cslab12`.
4. Change directory to `/data/biocs/b/student.accounts/cs340_sw/demos/`
5. Copy the two files `displayvm.c` and `displayvm_syms.txt` to your home directory:

```
$ cp displayvm.c displayvm_syms.txt ~/
```

6. Study the file `displayvm.c`. Your task is to decide where each of the user-defined symbols will be located in the executable's virtual memory (in ELF). The file `displayvm_syms.txt` has a list of the symbols that you need to locate. You are to fill in the missing information in that file, following the instructions in it. If you do not follow the instructions exactly, you will not receive full credit. The amount you lose will be determined by whether your program can be auto-graded. Do not edit this file in any editor outside of the `cslab` host. You can use `vi`, `emacs`, `nano`, or `pico`. If you copy it to a Windows or Mac host, and copy it back, it may no longer be in a form recognizable in a UNIX system as plain text.
7. Once you have completed the task, you will use the `submithwk_cs340` command to submit it. Remember that it requires two arguments: the number of the assignment (3 in this case) and the pathname of your homework file. **To submit a plain text file, which is what your `displayvm_syms.txt` file is, however, you give it the `-t` option.**

Thus, to submit this assignment, assuming that your current working directory is your home directory, you will type

```
submithwk_cs340 -t 3 displayvm_syms.txt
```

The program will copy your `displayvm_syms.txt` file into the directory

```
/data/biocs/b/student.accounts/cs340_sw/hwks/hwk3/
```

and if it is successful, it will display the message, "File `hwk3_username.txt` successfully submitted." where `username` is your username. You will not be able to read this file, nor will anyone else except for me. But you can double-check that the command succeeded by typing the command

```
ls -l /data/biocs/b/student.accounts/cs340_sw/hwks/hwk3
```

and making sure you see a non-empty file named `hwk1_username` whose date of last modification is the time at which you ran the command. The size of that file should be **exactly the same** as the size of your `.bashrc` file.



Grading Rubric

This assignment is worth 3% of your final grade. It will be graded out of 12 points. You will receive full credit if the file has all correct answers and has been submitted by the assignment deadline, which is stated above. You will receive partial credit in case some answers are not correct. If it is not submitted by the deadline, you receive no credit.